

urban areas.<sup>44</sup> In designing distribution plans, state commissions might want to consider several factors.

- a. A state plan might be designed to reflect that service areas and build-out responsibilities for competitive LECs in the state are larger than wire centers, and accordingly require a cost model operating at a geographic scale larger than the wire center.
- b. A state plan might be designed to reflect the geographic scale at which incumbent LEC wholesale prices are de-averaged.<sup>45</sup>
- c. A state plan might be designed around specific state policy objectives. For example, a state might want to promote investment in parts of a state needing to upgrade the quality of service or physical facilities.

Each plan would also contain assurances necessary to distribute the funds efficiently and to meet federal policy objectives.

- a. The plan would state that the commission has authority under state law to distribute federal discretionary high cost support.<sup>46</sup>

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<sup>44</sup> Two methods are described here for purposes of illustration.

Using Method A, the state commission would perform a support calculation for each ETC in the state. The support for each ETC would be based upon the difference between its average cost and a statewide cost threshold. Cost could be determined by a forward-looking cost model, an embedded cost model, or a blend of the two. Therefore, Model A could itself have a number of variants based on different combinations of forward-looking and embedded costs.

This is analogous to the method that the FCC would use to calculate support for the state as a whole, but with the difference that the state would adjust the statewide threshold cost parameter to ensure the distribution of all high cost funds, both state and federal, that are likely to be available. The total amount distributed would consist of federal hold-harmless support, federal discretionary support and any funds raised by the state.

Using Method B, as in Method A, the state commission would perform a support calculation for each ETC in the state, and once again the support for each ETC would be based upon the difference between its average cost and a statewide cost threshold. Each ETC would receive 100 percent of its hold-harmless amount plus a pro-rata portion of its other support need. The pro-rata portion would be the same for all ETCs in that state in a given year. As with Method A, the total amount distributed would consist of federal hold-harmless support, federal discretionary support and any funds raised by the state.

<sup>45</sup> For example, if a state has established three pricing zones for resale of services available from its regional Bell operating company, it might decide to establish the same three zones for calculation of high cost support.

<sup>46</sup> The FCC might want to seek public comment on whether state commissions will require legislative authority to distribute federal funds in this manner. Some commissions may conclude that they presently have authority to so act, either under the Telecom Act or under existing state law. Others may need or may desire to  
(continued...)

- b. The plan would state whether the commission prefers to receive title to the funds or to have a power of appointment for the funds. If the commission prefers title, the plan should also describe whether the commission prefers to use a third party administrator to receive and account for federal support, and if so, should name that administrator.
- c. The plan would state that distributions of federal funds will be made only to ETCs for the purpose of defraying high local rates for universal service<sup>47</sup> in high cost, rural and insular areas.

The FCC would review state plans for distribution of federal funds. The FCC would require that such plans advance the objectives of section 254 of the Telecom Act, including the requirement that rates and service in rural areas be reasonably comparable to those in urban areas. State plans would also need to be competitively neutral,<sup>48</sup> and should also ensure that each ETC receives an amount of federal support at least equal to the hold-harmless portion that ETC has generated.

#### G. Individual Income Factors

Average income might be used to adjust federal support levels. Support might be increased, for example, in states with a high incidence of poverty or states with a low average income. Low income ratepayers in many cases may also live in low cost areas, thus creating the appearance that poor individuals in low-cost areas are being required to subsidize rich individuals in high-cost areas. While using an income-based test may warrant further study, for the reasons discussed below, no income factor has been included in this proposal.

First, by collecting funds from interstate revenues, federal support will be raised in a progressive manner. This is because customers who use a high volume of interstate services will contribute proportionately more to the fund. These are generally business customers and

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<sup>46</sup> (...continued)  
seek explicit state statutory authority.

<sup>47</sup> The elements of service required to be supported are defined in 47 U.S.C. § 54.101.

<sup>48</sup> The competitive neutrality requirement might require that carrier support be "portable."

higher income residential customers. It is unlikely, therefore, that low-income individuals, even in low-cost states, would be significantly burdened by this proposal.<sup>49</sup>

Moreover, high cost support is only one part of the program supported by the FCC's universal service mechanisms. Support for schools and libraries and support for the lifeline and link-up programs are specifically targeted to the needs of the educational and low-income communities. Indeed, much of the support under these programs flows to low-cost areas.

#### **H. Subsequent Years.**

It was noted above that the most recent possible embedded data should be used in each year's support calculation. Indeed, it may be that the data should be so fresh that they should be estimated for the upcoming year.<sup>50</sup>

In addition, hold-harmless calculations should be updated annually. This will ensure that legitimate transactions now in progress will be reflected in the hold-harmless base. For example, although the FCC has forbidden further increases of high cost support through sale of exchanges to small companies,<sup>51</sup> some such sales have already been completed. It would be unfair to the carriers and customers in these states if the effects of completed and allowed telephone exchange sales were to be ignored in the hold-harmless calculation.<sup>52</sup>

#### **I. Lifetime of the Plan.**

For a number of reasons, this model should be considered an interim solution. This is due in part to limitations in the model, and due in part to expected developments in the telecommunications industry.

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<sup>49</sup> Moreover, as a practical matter, so long as the high cost support is funded by a surcharge on a class of service (i.e., "interstate") it would be impractical if not impossible to exclude contribution from low-income individuals who happened to use that class of service.

<sup>50</sup> An auditing provision would also be needed. See footnote 30, above.

<sup>51</sup> This prohibition applies unless a carrier made a binding commitment before May 7, 1997 to purchase an exchange. Universal Service Order, ¶ 308.

<sup>52</sup> This will require the FCC to continue to recalculate support under the existing system as though that system were still in effect. In particular, the FCC will have to calculate both high cost support and DEM weighting as though this plan had not been adopted.

The model includes embedded cost as a primary factor affecting the distribution of federal support. As facilities-based competition progresses, more and more investment will be made by competitive LECS. Competitive LECs do not, however, report their costs to the FCC, and these costs cannot be added to those filed by incumbent LECs. As facilities-based competitive LECs acquire a larger share of the local exchange market, their investment may become a significant share of the total investment in the public switched network. In that event, embedded cost data will increasingly understate total net investment, and any model that relies on average embedded cost in each state can become less reliable. When reported investment decreases to 70 or 80 percent of the total network, this model may need to be replaced, possibly by a bidding process.<sup>33</sup>

The model also includes, in Step 4, a hold-harmless calculation. Because of the methods that the FCC has used in the past to distribute federal support, this hold-harmless guarantee is primarily of benefit to smaller incumbent LECs. Many of these companies are rural telephone companies and are entitled to separate treatment under applicable FCC orders. To date, the FCC has not indicated any clear intent to reduce substantially the support for these companies and has left this question to subsequent rulemaking.<sup>34</sup> Nevertheless, after the passage of several years, policy makers might attach reduced importance to sustaining the hold-harmless expectation indefinitely.

The telecommunications market itself may also evolve in unexpected ways. This could invalidate some of the assumptions underlying the FCC's current policy on high cost areas and could equally invalidate the assumptions underlying this model. For example, the FCC requires that high cost support be calculated on a fine geographic basis no larger than the wire

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<sup>33</sup> The model bases support distributions for some states on the difference between the state's embedded average cost and the national average cost. Therefore, to the extent that a particular data error applies equally to all states, it could have a negligible effect on the distribution. However, at some time in the future, facilities-based competitive LECs may have so many lines that the embedded cost per line data from incumbent LECs will no longer represent a fair sample of the lines in the state. At that time the reported embedded investment would no longer be a reliable indicator of cost.

<sup>34</sup> The FCC has stated an intention to establish a forward-looking economic cost mechanism for rural carriers. Universal Service Order, ¶ 252. The FCC also has stated that it will not base distributions to rural carriers on forward-looking cost until further review. *Id.* at ¶ 203. However, the FCC has also stated that it intends to pay only 25 percent of the cost of support. *Id.* at ¶ 269, and this presumably applies to both rural and non-rural carriers.

center.<sup>55</sup> This presupposes that competitive LECs will be free in each state to offer their service areas on a fine geographic scale and also presupposes that resale rates will be de-averaged at a similar scale. As states implement the Telecom Act over the next several years, those assumptions may not prove accurate. In that event, it may be appropriate to calculate forward-looking support on a different geographic scale.<sup>56</sup>

Based upon these considerations, the FCC may want to reexamine this model after it has been in place approximately four years. It may be appropriate to make major changes to the model at that time or even to develop an entirely new model.

## V. Benefits

The proposed plan offers numerous benefits.

### A. Intrastate Purpose

Under this plan, while the benefits vary from one state to another, all of the money produced would be used by state commissions to reduce intrastate rates. This is consistent with the purpose of the present high cost funding program and with the Act's requirement to achieve "reasonably comparable rates."

This plan is also more likely to produce reduced retail rates or to maintain existing rate levels. Under the May 8 order, high cost support would have been used to reduce interstate access charges. Therefore, the immediate beneficiaries of the FCC's program were interstate service providers who might then choose to pass these cost reductions along in the form of rate reductions. If rates were reduced, benefits would not necessarily flow to the states from which the contributions came, but, under the Telecom Act,<sup>57</sup> would produce nationwide toll rate decreases.

This plan does not provide any revenue for carriers providing services in the interstate jurisdiction. If the FCC is concerned that access charges include implicit subsidies, it may

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<sup>55</sup> Universal Service Order, ¶ 250(10).

<sup>56</sup> Alternatively, competitive LECs may be able to identify low-cost and high profit customers within a wire center and avoid serving other higher cost or lower volume customers. In that event, even more geographically precise measurements of cost may be necessary.

<sup>57</sup> 47 U.S.C. §254(g).

want to establish additional surcharges and distributions in order to convert existing implicit subsidies in the interstate jurisdiction to explicit subsidies.

### B. Sufficiency

Assuming that the national average cost is "reasonably comparable" to urban costs,<sup>58</sup> this proposal, in conjunction with state-raised funds, would be sufficient to ensure that all rural areas have intrastate rates no higher than those "reasonably comparable" to urban areas.

This plan may require states to enact supplemental programs, as authorized under section 254(f) of the Telecom Act. The details will depend upon several factors, including whether states de-average their retail and wholesale rates.

### C. Minimal Size

The total cost of this proposal, is estimated at \$1.95 billion.<sup>59</sup> This is an increase from the current total support (for high cost and DEM weighting) of approximately \$1.25 billion.<sup>60</sup>

This proposal would require a smaller fund than any plan that fully funds the results of a forward-looking cost model. Since those models generally calculate support on a wire-center-by-wire-center basis (or smaller), and since they do not take account of embedded costs in low cost areas, they tend to require much larger expenditures of federal funds. For example, under the Blended Cost model, full federal funding would have a total cost of \$7.8 billion.<sup>61</sup>

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<sup>58</sup> Or, in the case of embedded costs, assuming that 105 % of the national average is reasonably comparable to urban costs.

<sup>59</sup> This estimate is based upon use of the Blended Cost Model for forward-looking costs and full hold-harmless on DEM weighting for all companies, including average schedule companies. The data do not include Alaska or the insular areas. Actual costs should be lower for two reasons:

1. The costs required by forward-looking models are decreasing.
2. Exclusion of DEM weighting for some average schedule companies should reduce cost by approximately \$90 million.

<sup>60</sup> 1996 high cost support was \$826 million, and DEM weighting was \$428 million. Industry Analysis Division, Common Carrier Bureau, FCC, *Universal Service Support and Telephone Revenue by State*, January, 1998, tables 2 and 6. These figures include Alaska and the insular areas.

<sup>61</sup> This estimate does not include Alaska or the insular areas.

**D. Intrastate Revenues Unaffected**

This proposal would be financed by an explicit surcharge on the interstate revenues of interstate carriers. Intrastate revenues would not be affected.

**E. Competitive Neutrality**

Federal funds would be distributed to state commissions, and the federal distribution would therefore be competitively neutral. In further distributing these funds, state commissions would also demonstrate, based on their plans approved by the FCC, that they would not establish a preference for a particular kind of carrier or technology.

This plan calculates support without regard to whether a carrier is a "rural" or a "non-rural" carrier. Therefore the plan would no longer discriminate against customers served by large local exchange carriers.<sup>62</sup>

**F. Incentive for Investment**

Depending upon other factors, this plan offers many states the prospect of increased federal support soon after carriers in that state make additional investment in the existing network.<sup>63</sup> For these states, increased facilities investment will promptly result in increased support to the state, particularly since embedded cost data are used based upon projections rather than historical data.

**G. Compatible With Separations**

This plan takes account of the jurisdictional separations of costs and revenues. Support to states is reduced, by an average of approximately 25 percent, based upon costs already covered in the interstate jurisdiction. While ensuring adequate federal support, this mechanism prevents double recovery.

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<sup>62</sup> Current FCC rules provide additional high cost support if a high cost company has fewer than 200,000 lines and to all companies with fewer than 50,000 lines.

<sup>63</sup> Under current calculations, 17 states would receive support based upon embedded cost.

## **H. Compatible with State Policies**

### **1. State Distributions**

This plan distributes support to carriers in a manner directed by the state commission, although the hold-harmless portion of distributions would be constrained by the historical eligibility of carriers.

Discretionary distributions by state commissions would be constrained by a state distribution plan approved in advance by the FCC. State commissions would need to develop these plans. While this may be an added burden on states, it is one that would likely fall on states in any case if the existing FCC order were implemented.

State commissions would have significant discretion over the support distributed to individual carriers.<sup>64</sup> For this reason, state commissions will be able to coordinate federal high cost support with any supplemental state support. Indeed, several states already have high cost support mechanisms in place, and these states could be assured by this plan that federal funding distributions will not be incompatible with their existing programs.

State distribution of high cost funds may also make simpler any effort to tie support to service quality. State commissions are well situated to observe service quality in their states. If the FCC were able to provide periodic and comprehensive national data, state commissions might then choose to build incentives for service quality into their high cost distribution plans.

Distribution to state commissions will also minimize the effects of any residual errors in the forward looking cost models. First, because calculations will be made on a statewide basis rather than on a wire center basis (or smaller), errors arising from particular geographic circumstances will tend to disappear. By making the sample size larger, the models should be more accurate, at least as to some kinds of non-systematic errors. Second, under this plan relatively few states receive support based upon forward-looking cost. Therefore, for states receiving support on any other basis, any remaining errors in the forward looking models cause no harm.

### **2. State Rate Designs**

Under the Telecom Act, states retain jurisdiction over intrastate rate designs, including whether to deaverage UNEs, whether to deaverage retail rates, and how to determine the size

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<sup>64</sup> Hold-harmless support is an exception to this rule.



of service areas for ETCs. This plan will permit states to evolve all of these policies in an interrelated manner. No state would be required to establish a particular sized unit for calculation of high cost support or for pricing.

#### **I. Earnings Based on Market Success**

Because states will be able to coordinate high cost support policies with other competition policies (such as deaveraging of UNEs, deaveraging of retail services and the size of service areas) this plan is more likely to minimize the opportunity of carriers to make profits by exploiting the irregularities of state and federal regulatory policy.

#### **J. Cost-Based System**

This plan is based upon costs, rather than rates, and thus avoids any intrusion of uncontrollable variables, such as state decisions to allocate revenues between toll and local services. The plan takes account of the differences in average cost among states. Indeed, it uses that criterion as the chief basis for the distribution.

To the extent that a state chooses to deaverage rates, the plan could leave the state responsible to provide support for its own high cost areas from state-generated funds. This is appropriate given that states control important rate setting policies and the states are likely to differ considerably in the degree to which they deaverage rates and in the sizes of service areas assigned to competitive carriers. Federal support will ensure that even when states choose to levy supplemental charges to support high cost areas, they can still maintain overall rates that are reasonably comparable to rates in urban areas.

This plan uses embedded cost and forward-looking costs as independent limits on federal support. This ensures that the most economically efficient network is assumed when calculating high cost support. It also reduces the effect of any errors that may remain in forward-looking cost models.

#### **K. Single System**

This plan treats all rural customers equally and thereby contributes to competitive neutrality. The size of a carrier (e.g., more than 50,000 lines or more than 200,000 lines) is not considered by this plan, only the characteristics of the service territory. Therefore, this

plan would allow the FCC to abolish the questionable distinction in the May 8 order between rural customers who happen to be served by "rural carriers" and rural customers who happen to be served by "non-rural carriers."

This plan also combines the existing high cost program that applies to loop costs and the existing DEM weighting program that applies to switching costs. Several states appear to have either high loop costs or high switching costs, but not both. Since the statutory objective is reasonably comparable rates, and since rates are a function of all costs, combining loop and switching costs will produce a simpler solution than the existing dual programs.<sup>63</sup> This also is more efficient since it does not provide support to areas where loop or switching cost is high, but overall costs are moderate.

Combining loop, switch and trunking costs into a single plan is also consistent with the mechanisms underlying the forward looking cost models. Those models estimate the cost characteristics of a network that can provide the services supported by universal service. That network necessarily includes some loop costs, but also some switching and trunking costs.

For both of these reasons -- combination of rural and non-rural and combination of loop, switch and trunking -- the alternative plan is simpler to design and administer. In particular, this plan would permit the FCC to avoid the many difficult decisions and rulemakings that lie ahead regarding high cost support for rural telephone companies. By combining rural and non-rural, and by combining loop and switch, this plan considerably simplifies the existing issue structure. The FCC can avoid anticipated rulemakings, now planned for 2001 or after, relating to support for rural carriers. This will somewhat simplify the process of implementing the Telecom Act for the FCC, and, on a substantive policy level, it will end the troubling distinctions in present law between carriers based upon their overall size.

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<sup>63</sup> This is consistent with the support calculations made by forward looking models, which generally calculate loop, switching and trunking costs.

#### **L. Hold-harmless**

This plan includes hold-harmless protection, both for states as a whole and for individual companies. This increases the total cost of federal support. Nevertheless, it is generally consistent with the May 8 order, which promised rural telephone companies that they would not face any significant change in support levels until at least January 1, 2001.

Hold-harmless support should be appropriate until the FCC becomes convinced that the forward-looking cost models have become sufficiently precise that existing expectations of continued support can safely be set aside.

#### **M. Minimal Litigation Risk**

This proposal could greatly reduce the uncertainty arising from pending litigation in the Fifth Circuit of the United States Court of Appeals. In that court, at least one low-average-cost state is seeking to determine whether the FCC has authority to levy charges on the intrastate revenues of interstate carriers. In addition, other high cost states are seeking a ruling on whether the FCC's May 8 order, setting federal support at 25% of need, is sufficient to ensure that rates in rural and high cost areas will be reasonably comparable to rates in urban areas.

If the pending challenge to the 25% federal support level should succeed in court, the stakes are high. If the Court should rule in favor of the petitioners and rule that the FCC must provide 100% of the support calculated under a forward-looking cost model, the Blended Model would predict that the size of the federal fund might need to be \$7.8 billion, more than four times as large as the fund proposed here.

By adopting this plan, the FCC could moot both kinds of challenges. It would no longer be necessary for the FCC to assert jurisdiction to impose a charge on the intrastate revenues of interstate carriers, and issues arising from the 25% federal support level described in the May 8 order would be mooted. While subsequent litigation would of course still be possible, the probability of FCC success in such litigation might be higher than at present.

### Appendix A - The Distribution of Costs

Two forward-looking cost models are under consideration by the FCC, the Hatfield model and the BCPM model. Each performs detailed cost analyses in small geographic areas. Each model then sorts these geographic areas into zones based upon the density of telephone lines per square mile. While it is not possible to blend the analyses of the two models, either model can be used to examine how density affects cost.<sup>66</sup> The results clearly indicate that it is more expensive to provide telecommunications services in rural states than in more densely populated states.

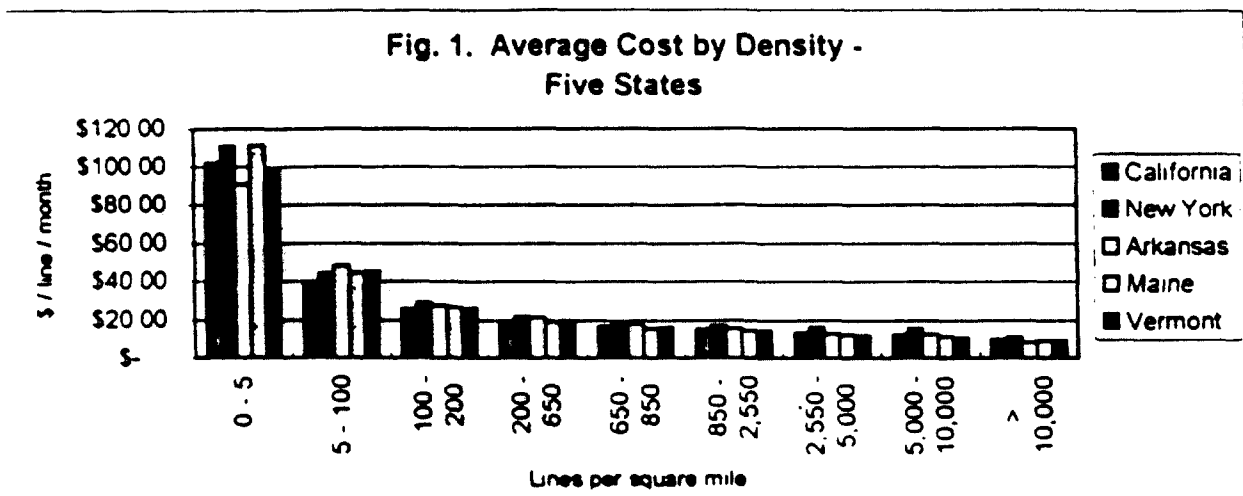


Figure 1 shows, for five states, how forward-looking costs vary in the nine density zones used by the Hatfield model.<sup>67</sup>

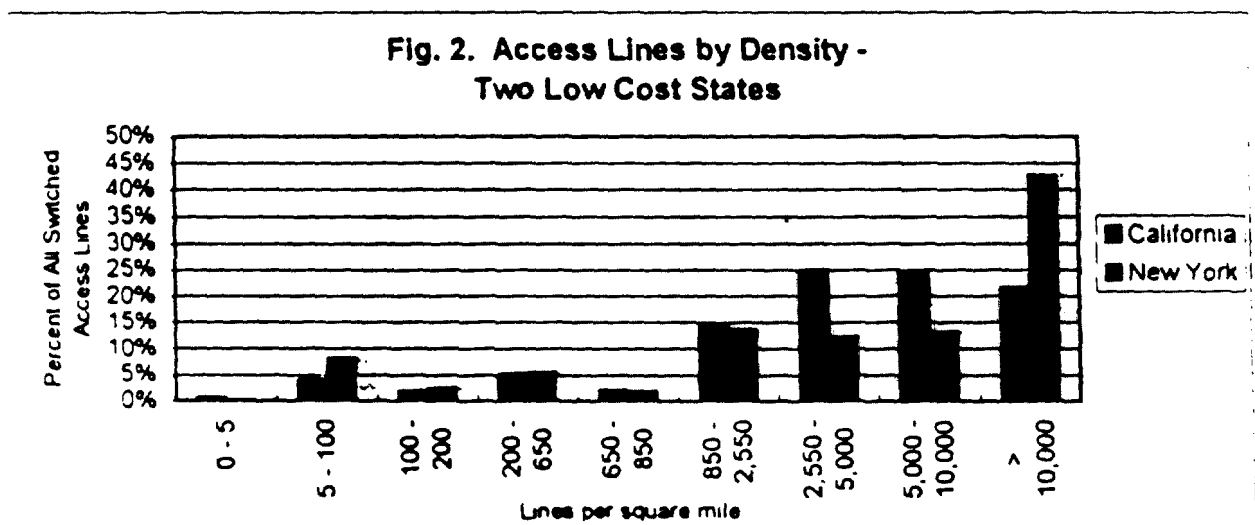
<sup>66</sup> The Blended Cost Model was prepared because no cost model has yet been adopted by the FCC. The Blended Cost Model, however, is merely an averaging of state-by-state results of the two leading models, BCPM and Hatfield. The density zone analysis within the two models cannot be averaged, however, because they do not agree on the number of density zones and because they do not agree on the upper and lower bounds of the density zones.

<sup>67</sup> Seven zones are used in the BCPM analysis. While the precise numbers may vary, substituting the BCPM model for the Hatfield model produces similar results.

As Figure 1 illustrates, the Hatfield model predicts some cost variations from state to state, but comparatively larger variations from one density zone to another. For the most rural density zone (0 to 5 lines per square mile), costs are typically in the range of \$100 per line per month.<sup>68</sup> In the second density zone (5 to 100 lines per square mile), costs are in the range of \$40 to \$45 per line per month. Conversely, in the three density zones where density exceeds 2,550 lines per square mile, costs average \$12.77 per month.

There is little uniformity from state to state, however, with regard to demographics. Figures 2 and 3 show the percentage of access lines found within each density zone for the same five states represented in Figure 1.

The two more urban states, California and New York, are represented in Figure 2. In California, 72 percent of the state's access lines are located in the three highest density zones. The Hatfield study reports the average weighted cost in these three zones in California to be \$12.19 per line per month. In New York, 68 percent of the access lines are found in those

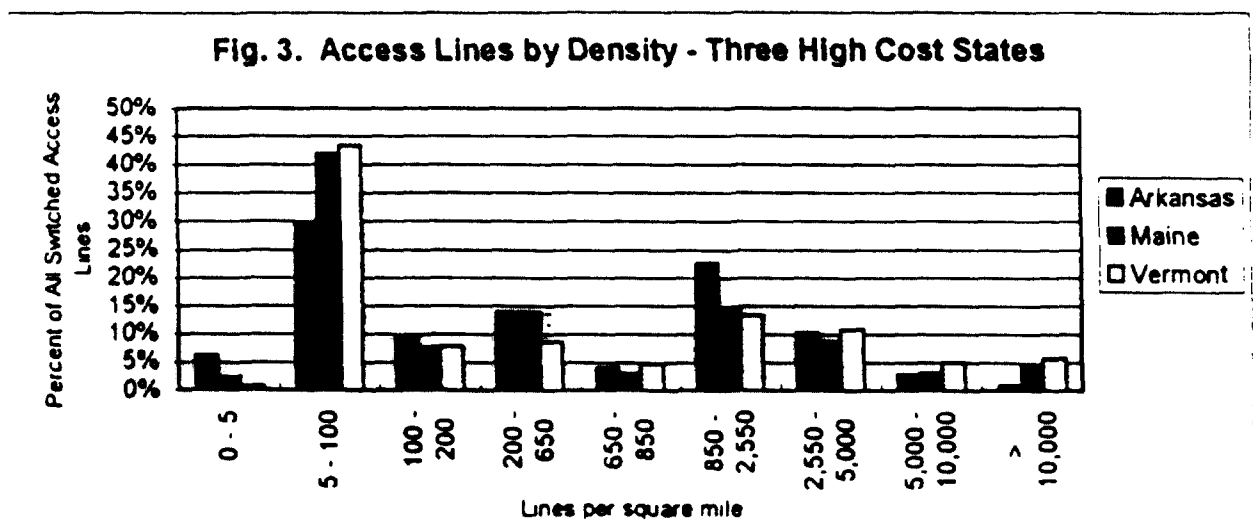


same three densely populated zones with an average cost of \$12.89 per line per month.

<sup>68</sup> The Hatfield Model data used here was derived from the model author's run using standard design parameters. The five states shown are representative of urban and rural states. Nevertheless, costs in some states were higher or lower than the amounts shown here, particularly in the lowest density zone, from 0 to 5 lines per square mile.

The combination of few high-cost lines and many low-cost lines within an urban state inevitably produces a low statewide average cost. Average costs predicted by the Hatfield model are \$15.01 in California and \$17.21 in New York. These states have lower statewide average costs than the national average cost of \$20.52.

In rural states, settlement patterns are quite different. Figure 3 shows the corresponding data for Arkansas, Maine, and Vermont, three states that are more rural than either California or New York. The graph indicates that a greater percentage of access lines in these rural states are found in the lower density zones on the left side of the graph. Indeed, a significant portion of telephone customers in these states live in the second density zone (where density is between 5 to 100 lines per square mile). The characteristic cost within this density zone is



approximately \$45 per line per month.<sup>69</sup>

<sup>69</sup> Each of the three states also shows increased population in the fifth density zone. This presumably results from the effects of small cities, like Little Rock, Portland, and Burlington. The cost characteristic of this density zone is about \$15 per month.

Figure 3 also shows that each of these three rural states has only a small proportion of its access lines located in the three highest density zones. Therefore these states have relatively few low-cost lines.

A state with a high percentage of its access lines in high cost areas generally will have a high average cost. Average costs predicted by the Hatfield model are \$31.43 in Arkansas, \$30.42 in Maine, and \$29.45 in Vermont. The statewide average in all three states is about \$10 higher than the national average cost.

Since a high proportion of access lines in these rural states are in low-density and high-cost areas, these states may also have a higher proportion of customers at risk from any rate de-averaging that might follow local exchange competition. While density is not the only determinant of high cost, this analysis demonstrates that some rural states have a high proportion of their access lines in high cost areas. These areas would be particularly vulnerable to rate increases, and the ensuing loss of customer penetration, if funding for high cost support is insufficient.

## **Appendix B - Sources of Embedded Cost Data**

Embedded data were derived from the following sources.

(a) Loop Cost.

This was set equal to the 1996 unseparated NTS revenue requirement<sup>70</sup> of all carriers, as reported to the FCC and as further reported in the 1997 Monitoring Report prepared by the Docket 80-286 Joint Board staff.

(b) Switching Cost.

(i) For Cost Companies - Data were extracted from the same NECA filing that was used for the loop studies. Contained in this data is Account 2210, Central Office Equipment (COE) Switching Investment which was used to determine Cat 2 (Tandem) and Cat 3 (Local Switching) by cost company study area. Using ARMIS 4304 data, GSF factors were calculated to supplement the COE data. Generic "small company" factors were developed using the average of all Tier 1 LECs excluding the RBOCs. Individual factors were developed at the study area level for the Tier 1 LECs. The revenue requirements were divided by USF loops to obtain a Switching Revenue Requirements/Loop, by study area.

(ii) For Average Schedule Companies - The data of local switching support (weighted DEM) amounts by study area was obtained from a filing with USAC. This data was generated by multiplying the COE revenue requirements by a set of factors based upon line size and minutes of use per line. The factors used are a part of the USAC filing. The COE revenue requirements were obtained by dividing local switching support (weighted DEM) by the factors described above. Using the "small company" GSF factors developed above, the GSF amounts were added to the direct cost. The revenue requirements were divided by USF loops to obtain a Switching Revenue Requirement/Loop, by study area.

(c) Trunking Cost.

VI. Total Cable & Wire (C&W) Investments and expenses and Total COE Transmission Investments and expenses by cost company were extracted from the NECA data. Using ARMIS data, a factor was developed for message trunk investment to total investment for both COE - Transmission and C&W. This factor approximates the effect of the removal of loop

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<sup>70</sup> 47 CFR Part 36 § 36.621



investment (both message and private line), and private line trunk investment. The ratio is unique for each Tier I study area. Study area trunking revenue requirements were then developed. The revenue requirements were divided by USF loops to obtain a Trunking Revenue Requirement/Loop, by study area.

**High Cost Modeling Project  
Part 1 - Support Calculation**

- Step 1 Calculate 75% of excess forward looking cost above stated threshold  
Step 2 Calculate 75% of excess embedded cost above stated threshold  
Step 3 Calculate the lesser of results 1 and 2  
Step 4 Calculate 1997 USF payments times stated protection level  
Step 5 Federal support equals greater of results 3 and 4

2/24/98 15 35

Federal Rate Required: 2.364%  
System Out of Balance by \$ (0.01) million

Federal Support to Intrastate Jurisdiction											Result: Support for State Determined by which Formula?
Step 1: Calculate Forward- Looking Support		Step 2: Calculate Embedded Cost Support		Step 3: Lesser of Steps 1 and 2		Step 4: Hold Harmless		Step 5: Greater of Steps 3 & 4			
Threshold= 100% or = \$ 28.12		Threshold= 106% or = \$ 36.68									
per line per mo.	Annual Total	per line per mo.	Annual Total	per line per mo.	Annual Total	per line per mo.	Annual Total	per line per mo.	Annual Total		
(\$ / / mo)	(\$ millions)	(\$ / / mo)	(\$ millions)	(\$ / / mo)	(\$ millions)	(\$ / / mo)	(\$ millions)	(\$ / / mo)	(\$ millions)		
Alabama	\$ 6.98 \$ 194	\$ 0.49 \$ 14	\$ 0.49 \$ 14	\$ 0.49 \$ 14	\$ 1.17 \$ 32	\$ 1.17 \$ 32	\$ 1.17 \$ 32	Hold-Harmless			
Arizona	\$ 0.56 \$ 17	\$ 0.79 \$ 24	\$ 0.56 \$ 17	\$ 0.56 \$ 17	\$ 1.43 \$ 44	\$ 1.43 \$ 44	\$ 1.43 \$ 44	Hold-Harmless			
Arkansas	\$ 10.59 \$ 168	\$ 6.29 \$ 99	\$ 6.29 \$ 99	\$ 6.29 \$ 99	\$ 3.50 \$ 55	\$ 3.50 \$ 55	\$ 3.50 \$ 55	Embedded			
California	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.15 \$ 38	\$ 0.15 \$ 38	\$ 0.15 \$ 38	Hold-Harmless			
Colorado	\$ 1.16 \$ 34	\$ 3.29 \$ 97	\$ 1.16 \$ 34	\$ 1.16 \$ 34	\$ 1.11 \$ 33	\$ 1.11 \$ 33	\$ 1.16 \$ 34	Forward-Looking			
Connecticut	\$ - \$ -	\$ 0.63 \$ 15	\$ - \$ -	\$ - \$ -	\$ 0.60 \$ 14	\$ 0.60 \$ 14	\$ 0.60 \$ 14	Hold-Harmless			
Delaware	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	Hold-Harmless			
Dist. of Columbia	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	Hold-Harmless			
Florida	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.55 \$ 65	\$ 0.55 \$ 65	\$ 0.55 \$ 65	Hold-Harmless			
Georgia	\$ 2.27 \$ 123	\$ 2.77 \$ 150	\$ 2.27 \$ 123	\$ 2.27 \$ 123	\$ 1.00 \$ 54	\$ 1.00 \$ 54	\$ 2.27 \$ 123	Forward-Looking			
Hawaii	\$ - \$ -	\$ 4.03 \$ 34	\$ - \$ -	\$ - \$ -	\$ 0.45 \$ 4	\$ 0.45 \$ 4	\$ 0.45 \$ 4	Hold-Harmless			
Idaho	\$ 9.92 \$ 76	\$ 3.54 \$ 27	\$ 3.54 \$ 27	\$ 3.54 \$ 27	\$ 3.34 \$ 26	\$ 3.34 \$ 26	\$ 3.54 \$ 27	Embedded			
Illinois	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.19 \$ 17	\$ 0.19 \$ 17	\$ 0.19 \$ 17	Hold-Harmless			
Indiana	\$ 1.54 \$ 62	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.29 \$ 12	\$ 0.29 \$ 12	\$ 0.29 \$ 12	Hold-Harmless			
Iowa	\$ 7.50 \$ 139	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 1.34 \$ 25	\$ 1.34 \$ 25	\$ 1.34 \$ 25	Hold-Harmless			
Kansas	\$ 6.87 \$ 126	\$ 3.31 \$ 60	\$ 3.31 \$ 60	\$ 3.31 \$ 60	\$ 2.64 \$ 48	\$ 2.64 \$ 48	\$ 3.31 \$ 60	Embedded			
Kentucky	\$ 7.31 \$ 174	\$ 3.04 \$ 72	\$ 3.04 \$ 72	\$ 3.04 \$ 72	\$ 0.84 \$ 20	\$ 0.84 \$ 20	\$ 3.04 \$ 72	Embedded			
Louisiana	\$ 2.36 \$ 66	\$ 3.12 \$ 88	\$ 2.36 \$ 66	\$ 2.36 \$ 66	\$ 1.72 \$ 48	\$ 1.72 \$ 48	\$ 2.36 \$ 66	Forward-Looking			
Maine	\$ 8.18 \$ 76	\$ 5.42 \$ 50	\$ 5.42 \$ 50	\$ 5.42 \$ 50	\$ 1.17 \$ 11	\$ 1.17 \$ 11	\$ 5.42 \$ 50	Embedded			
Maryland	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.01 \$ 0	\$ 0.01 \$ 0	\$ 0.01 \$ 0	Hold-Harmless			
Massachusetts	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.01 \$ 0	\$ 0.01 \$ 0	\$ 0.01 \$ 0	Hold-Harmless			
Michigan	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.33 \$ 24	\$ 0.33 \$ 24	\$ 0.33 \$ 24	Hold-Harmless			
Minnesota	\$ 3.28 \$ 109	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.84 \$ 28	\$ 0.84 \$ 28	\$ 0.84 \$ 28	Hold-Harmless			
Mississippi	\$ 10.26 \$ 156	\$ 7.00 \$ 107	\$ 7.00 \$ 107	\$ 7.00 \$ 107	\$ 1.48 \$ 23	\$ 1.48 \$ 23	\$ 7.00 \$ 107	Embedded			
Missouri	\$ 3.37 \$ 129	\$ 0.65 \$ 25	\$ 0.65 \$ 25	\$ 0.65 \$ 25	\$ 1.03 \$ 39	\$ 1.03 \$ 39	\$ 1.03 \$ 39	Hold-Harmless			
Montana	\$ 19.25 \$ 113	\$ 7.89 \$ 46	\$ 7.89 \$ 46	\$ 7.89 \$ 46	\$ 5.75 \$ 34	\$ 5.75 \$ 34	\$ 7.89 \$ 46	Embedded			
Nebraska	\$ 8.98 \$ 103	\$ 3.03 \$ 35	\$ 3.03 \$ 35	\$ 3.03 \$ 35	\$ 1.44 \$ 17	\$ 1.44 \$ 17	\$ 3.03 \$ 35	Embedded			
Nevada	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.58 \$ 8	\$ 0.58 \$ 8	\$ 0.58 \$ 8	Hold-Harmless			
New Hampshire	\$ 2.62 \$ 24	\$ 3.25 \$ 30	\$ 2.62 \$ 24	\$ 2.62 \$ 24	\$ 0.79 \$ 7	\$ 0.79 \$ 7	\$ 2.62 \$ 24	Forward-Looking			
New Jersey	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.04 \$ 3	\$ 0.04 \$ 3	\$ 0.04 \$ 3	Hold-Harmless			
New Mexico	\$ 8.57 \$ 89	\$ 5.12 \$ 53	\$ 5.12 \$ 53	\$ 5.12 \$ 53	\$ 2.82 \$ 29	\$ 2.82 \$ 29	\$ 5.12 \$ 53	Embedded			
New York	\$ - \$ -	\$ 1.48 \$ 220	\$ - \$ -	\$ - \$ -	\$ 0.57 \$ 84	\$ 0.57 \$ 84	\$ 0.57 \$ 84	Hold-Harmless			
North Carolina	\$ 3.47 \$ 185	\$ 1.39 \$ 74	\$ 1.39 \$ 74	\$ 1.39 \$ 74	\$ 0.54 \$ 29	\$ 0.54 \$ 29	\$ 1.39 \$ 74	Embedded			
North Dakota	\$ 18.34 \$ 87	\$ 2.42 \$ 11	\$ 2.42 \$ 11	\$ 2.42 \$ 11	\$ 3.76 \$ 18	\$ 3.76 \$ 18	\$ 3.76 \$ 18	Hold-Harmless			
Ohio	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.13 \$ 10	\$ 0.13 \$ 10	\$ 0.13 \$ 10	Hold-Harmless			
Oklahoma	\$ 6.52 \$ 146	\$ 1.98 \$ 44	\$ 1.98 \$ 44	\$ 1.98 \$ 44	\$ 1.95 \$ 44	\$ 1.95 \$ 44	\$ 1.98 \$ 44	Embedded			
Oregon	\$ 3.52 \$ 81	\$ 1.54 \$ 35	\$ 1.54 \$ 35	\$ 1.54 \$ 35	\$ 1.15 \$ 26	\$ 1.15 \$ 26	\$ 1.54 \$ 35	Embedded			
Pennsylvania	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.12 \$ 11	\$ 0.12 \$ 11	\$ 0.12 \$ 11	Hold-Harmless			
Rhode Island	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ - \$ -	Hold-Harmless			
South Carolina	\$ 4.62 \$ 113	\$ 4.33 \$ 106	\$ 4.33 \$ 106	\$ 4.33 \$ 106	\$ 1.57 \$ 39	\$ 1.57 \$ 39	\$ 4.33 \$ 106	Embedded			
South Dakota	\$ 18.58 \$ 88	\$ 2.94 \$ 14	\$ 2.94 \$ 14	\$ 2.94 \$ 14	\$ 3.01 \$ 14	\$ 3.01 \$ 14	\$ 3.01 \$ 14	Hold-Harmless			
Tennessee	\$ 3.64 \$ 138	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.88 \$ 33	\$ 0.88 \$ 33	\$ 0.88 \$ 33	Hold-Harmless			
Texas	\$ 0.29 \$ 39	\$ 1.08 \$ 144	\$ 0.29 \$ 39	\$ 0.29 \$ 39	\$ 0.95 \$ 128	\$ 0.95 \$ 128	\$ 0.95 \$ 128	Hold-Harmless			
Utah	\$ 1.25 \$ 15	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 1.10 \$ 14	\$ 1.10 \$ 14	\$ 1.10 \$ 14	Hold-Harmless			
Vermont	\$ 7.89 \$ 36	\$ 9.53 \$ 43	\$ 7.89 \$ 36	\$ 7.89 \$ 36	\$ 1.94 \$ 9	\$ 1.94 \$ 9	\$ 7.89 \$ 36	Forward-Looking			
Virginia	\$ 0.37 \$ 19	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.21 \$ 10	\$ 0.21 \$ 10	\$ 0.21 \$ 10	Hold-Harmless			
Washington	\$ - \$ -	\$ 0.66 \$ 27	\$ - \$ -	\$ - \$ -	\$ 1.22 \$ 49	\$ 1.22 \$ 49	\$ 1.22 \$ 49	Hold-Harmless			
West Virginia	\$ 11.17 \$ 125	\$ 5.09 \$ 57	\$ 5.09 \$ 57	\$ 5.09 \$ 57	\$ 1.80 \$ 20	\$ 1.80 \$ 20	\$ 5.09 \$ 57	Embedded			
Wisconsin	\$ 2.29 \$ 87	\$ - \$ -	\$ - \$ -	\$ - \$ -	\$ 0.98 \$ 37	\$ 0.98 \$ 37	\$ 0.98 \$ 37	Hold-Harmless			
Wyoming	\$ 19.41 \$ 64	\$ 10.23 \$ 33	\$ 10.23 \$ 33	\$ 10.23 \$ 33	\$ 5.11 \$ 17	\$ 5.11 \$ 17	\$ 10.23 \$ 33	Embedded			
Total	\$ 3,201	\$ 1,836	\$ 1,305	\$ 1,305	\$ 1,351	\$ 1,351	\$ 1,948				
Maximum Value	\$ 19.41	\$ 10.23	\$ 10.23	\$ 10.23	\$ 5.75	\$ 5.75	\$ 10.23				
Minimum Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				

Number of states under	
Forward-Looking Cost	5
Embedded Cost	15
Hold-Harmless	27
No Support	3

Note: The table shown here are probably overestimating the support needed.  
• Many forward looking models are predicting a smaller federal support than the state used here.  
• Only Wyoming hold-harmless here includes cost of 100% of average school district costs.

**High Cost Modeling Project**  
**Part 2A - Hold-Harmless Support Calculation (Step 4)**

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	Type A Hold-Harmless (Support Based)			Type B Hold Harmless (Contrib- ution Based)	Hold- Harmless Support (Step 4)
	Existing Support		Type A Hold- Harmless		
	High Cost Support	DEM Weighting (note 1)			
	(millions)	(millions)	(millions)	(millions)	(millions)
Alabama	\$ 21.4	\$ 11.0	\$ 32.4	\$ -	\$ 32.4
Arizona	\$ 19.7	\$ 6.5	\$ 26.2	\$ 17.4	\$ 43.6
Arkansas	\$ 45.8	\$ 9.5	\$ 55.3	\$ -	\$ 55.3
California	\$ 28.5	\$ 9.2	\$ 37.7	\$ -	\$ 37.7
Colorado	\$ 28.3	\$ 4.3	\$ 32.6	\$ -	\$ 32.6
Connecticut	\$ -	\$ 1.2	\$ 1.2	\$ 13.2	\$ 14.4
Delaware	\$ -	\$ -	\$ -	\$ -	\$ -
District of Columbia	\$ -	\$ -	\$ -	\$ -	\$ -
Florida	\$ 11.6	\$ 4.7	\$ 16.3	\$ 48.8	\$ 65.1
Georgia	\$ 41.1	\$ 13.0	\$ 54.0	\$ -	\$ 54.0
Hawaii	\$ -	\$ 0.6	\$ 0.6	\$ 3.1	\$ 3.7
Idaho	\$ 18.9	\$ 6.9	\$ 25.8	\$ -	\$ 25.8
Illinois	\$ 6.6	\$ 10.8	\$ 17.4	\$ -	\$ 17.4
Indiana	\$ 3.0	\$ 8.5	\$ 11.5	\$ -	\$ 11.5
Iowa	\$ 9.1	\$ 15.6	\$ 24.7	\$ -	\$ 24.7
Kansas	\$ 36.0	\$ 12.2	\$ 48.2	\$ -	\$ 48.2
Kentucky	\$ 14.1	\$ 6.1	\$ 20.1	\$ -	\$ 20.1
Louisiana	\$ 40.0	\$ 8.2	\$ 48.2	\$ -	\$ 48.2
Maine	\$ 4.6	\$ 6.2	\$ 10.9	\$ -	\$ 10.9
Maryland	\$ -	\$ 0.5	\$ 0.5	\$ -	\$ 0.5
Massachusetts	\$ 0.0	\$ 0.3	\$ 0.3	\$ -	\$ 0.3
Michigan	\$ 13.1	\$ 10.5	\$ 23.6	\$ -	\$ 23.6
Minnesota	\$ 10.1	\$ 18.0	\$ 28.1	\$ -	\$ 28.1
Mississippi	\$ 17.7	\$ 4.9	\$ 22.6	\$ -	\$ 22.6
Missouri	\$ 29.4	\$ 10.0	\$ 39.4	\$ -	\$ 39.4
Montana	\$ 23.4	\$ 10.3	\$ 33.7	\$ -	\$ 33.7
Nebraska	\$ 6.7	\$ 9.9	\$ 16.6	\$ -	\$ 16.6
Nevada	\$ 3.2	\$ 4.6	\$ 7.8	\$ -	\$ 7.8
New Hampshire	\$ 2.5	\$ 4.8	\$ 7.3	\$ -	\$ 7.3
New Jersey	\$ 2.0	\$ 0.9	\$ 2.9	\$ -	\$ 2.9
New Mexico	\$ 19.1	\$ 10.1	\$ 29.2	\$ -	\$ 29.2
New York	\$ 9.6	\$ 20.4	\$ 30.0	\$ 54.3	\$ 84.3
North Carolina	\$ 21.5	\$ 7.8	\$ 29.1	\$ -	\$ 29.1
North Dakota	\$ 6.5	\$ 11.3	\$ 17.8	\$ -	\$ 17.8
Ohio	\$ 4.6	\$ 5.1	\$ 9.8	\$ -	\$ 9.8
Oklahoma	\$ 26.6	\$ 17.2	\$ 43.8	\$ -	\$ 43.8
Oregon	\$ 18.2	\$ 8.2	\$ 26.3	\$ -	\$ 26.3
Pennsylvania	\$ 1.4	\$ 10.0	\$ 11.4	\$ -	\$ 11.4
Rhode Island	\$ -	\$ -	\$ -	\$ -	\$ -
South Carolina	\$ 22.9	\$ 15.7	\$ 38.6	\$ -	\$ 38.6
South Dakota	\$ 4.0	\$ 10.3	\$ 14.3	\$ -	\$ 14.3
Tennessee	\$ 7.6	\$ 11.7	\$ 19.2	\$ 14.1	\$ 33.3
Texas	\$ 73.2	\$ 19.4	\$ 92.6	\$ 35.9	\$ 128.5
Utah	\$ 2.9	\$ 4.5	\$ 7.4	\$ 6.1	\$ 13.5
Vermont	\$ 4.0	\$ 4.9	\$ 8.9	\$ -	\$ 8.9
Virginia	\$ 5.0	\$ 5.4	\$ 10.4	\$ -	\$ 10.4
Washington	\$ 24.7	\$ 7.6	\$ 32.2	\$ 16.5	\$ 48.7
West Virginia	\$ 16.8	\$ 3.2	\$ 20.1	\$ -	\$ 20.1
Wisconsin	\$ 12.1	\$ 25.4	\$ 37.5	\$ -	\$ 37.5
Wyoming	\$ 12.6	\$ 4.1	\$ 16.7	\$ -	\$ 16.7
Total	\$ 730	\$ 412	\$ 1,142	\$ 209	\$ 1,351

Note 1 DEM weighting amounts shown here include all average schedule companies, and thus overestimate support.

**High Cost Modeling Project**  
**Part 2B - Hold-Harmless Part B Support Calculation**

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	Type B Hold-Harmless - Contribution Based								
	New System With Type A Hold-Harmless Included			Existing System Net Pay-In (if > 0)	Increased Net Pay-In (if > 0)	Embedded Costs		Type B Hold-Harmless	
	Support	Contrib- ution	Net Pay-In (if > 0)			Percent of National Average	Switch : Thres- hold = 100% of N/Avg (On = 1)	Initial Estimate	Final Support
Alabama	\$ 32.4	\$ 23.7	\$ -	\$ -	\$ -	107%	1	\$ -	\$ -
Arizona	\$ 26.2	\$ 34.0	\$ 7.8	\$ -	\$ 7.8	108%	1	\$ 7.8	\$ 17.4
Arkansas	\$ 99.5	\$ 14.3	\$ -	\$ -	\$ -	130%	1	\$ -	\$ -
California	\$ 37.7	\$ 168.5	\$ 130.8	\$ 105.9	\$ 24.9	85%	0	\$ -	\$ -
Colorado	\$ 34.2	\$ 33.6	\$ -	\$ -	\$ -	118%	1	\$ -	\$ -
Connecticut	\$ 1.2	\$ 27.8	\$ 26.6	\$ 16.7	\$ 9.9	107%	1	\$ 9.9	\$ 13.2
Delaware	\$ -	\$ 6.8	\$ 6.8	\$ 4.2	\$ 2.6	78%	0	\$ -	\$ -
District of Columbia	\$ -	\$ 10.0	\$ 10.0	\$ 6.8	\$ 3.1	58%	0	\$ -	\$ -
Florida	\$ 16.3	\$ 113.0	\$ 96.7	\$ 61.5	\$ 35.2	103%	1	\$ 35.2	\$ 48.8
Georgia	\$ 123.2	\$ 57.3	\$ -	\$ -	\$ -	116%	1	\$ -	\$ -
Hawaii	\$ 0.6	\$ 7.2	\$ 6.6	\$ 4.3	\$ 2.3	121%	1	\$ 2.3	\$ 3.1
Idaho	\$ 27.3	\$ 8.9	\$ -	\$ -	\$ -	119%	1	\$ -	\$ -
Illinois	\$ 17.4	\$ 73.5	\$ 56.1	\$ 40.1	\$ 16.0	83%	0	\$ -	\$ -
Indiana	\$ 11.5	\$ 31.8	\$ 20.3	\$ 12.8	\$ 7.5	94%	0	\$ -	\$ -
Iowa	\$ 24.7	\$ 17.0	\$ -	\$ -	\$ -	101%	1	\$ -	\$ -
Kansas	\$ 60.4	\$ 16.9	\$ -	\$ -	\$ -	118%	1	\$ -	\$ -
Kentucky	\$ 72.5	\$ 24.0	\$ -	\$ -	\$ -	117%	1	\$ -	\$ -
Louisiana	\$ 66.2	\$ 23.5	\$ -	\$ -	\$ -	117%	1	\$ -	\$ -
Maine	\$ 50.5	\$ 8.5	\$ -	\$ -	\$ -	126%	1	\$ -	\$ -
Maryland	\$ 0.5	\$ 38.9	\$ 38.4	\$ 25.2	\$ 13.2	87%	0	\$ -	\$ -
Massachusetts	\$ 0.3	\$ 46.0	\$ 45.7	\$ 33.4	\$ 12.3	97%	0	\$ -	\$ -
Michigan	\$ 23.6	\$ 47.8	\$ 24.2	\$ 17.7	\$ 6.5	89%	0	\$ -	\$ -
Minnesota	\$ 28.1	\$ 29.1	\$ 1.0	\$ -	\$ 1.0	97%	0	\$ -	\$ -
Mississippi	\$ 106.7	\$ 14.4	\$ -	\$ -	\$ -	133%	1	\$ -	\$ -
Missouri	\$ 39.4	\$ 32.6	\$ -	\$ -	\$ -	106%	1	\$ -	\$ -
Montana	\$ 46.2	\$ 6.4	\$ -	\$ -	\$ -	136%	1	\$ -	\$ -
Nebraska	\$ 34.9	\$ 10.9	\$ -	\$ -	\$ -	117%	1	\$ -	\$ -
Nevada	\$ 7.8	\$ 16.5	\$ 8.6	\$ 1.4	\$ 7.2	82%	0	\$ -	\$ -
New Hampshire	\$ 24.2	\$ 11.7	\$ -	\$ -	\$ -	118%	1	\$ -	\$ -
New Jersey	\$ 2.9	\$ 77.2	\$ 74.3	\$ 46.8	\$ 27.5	81%	0	\$ -	\$ -
New Mexico	\$ 53.0	\$ 12.2	\$ -	\$ -	\$ -	125%	1	\$ -	\$ -
New York	\$ 30.0	\$ 132.1	\$ 102.1	\$ 63.7	\$ 38.4	111%	1	\$ 38.4	\$ 54.3
North Carolina	\$ 74.1	\$ 48.4	\$ -	\$ 3.8	\$ (3.8)	110%	1	\$ -	\$ -
North Dakota	\$ 17.8	\$ 5.4	\$ -	\$ -	\$ -	115%	1	\$ -	\$ -
Ohio	\$ 9.8	\$ 64.7	\$ 55.0	\$ 36.9	\$ 18.1	95%	0	\$ -	\$ -
Oklahoma	\$ 44.3	\$ 19.2	\$ -	\$ -	\$ -	113%	1	\$ -	\$ -
Oregon	\$ 35.3	\$ 22.3	\$ -	\$ -	\$ -	111%	1	\$ -	\$ -
Pennsylvania	\$ 11.4	\$ 77.2	\$ 65.8	\$ 44.1	\$ 21.6	84%	0	\$ -	\$ -
Rhode Island	\$ -	\$ 7.8	\$ 7.8	\$ 5.1	\$ 2.6	97%	0	\$ -	\$ -
South Carolina	\$ 106.1	\$ 24.2	\$ -	\$ -	\$ -	122%	1	\$ -	\$ -
South Dakota	\$ 14.3	\$ 5.4	\$ -	\$ -	\$ -	117%	1	\$ -	\$ -
Tennessee	\$ 19.2	\$ 34.4	\$ 15.2	\$ 5.2	\$ 10.0	105%	1	\$ 10.0	\$ 14.1
Texas	\$ 92.8	\$ 103.2	\$ 10.6	\$ -	\$ 10.6	109%	1	\$ 10.6	\$ 35.9
Utah	\$ 7.4	\$ 12.8	\$ 5.4	\$ 0.8	\$ 4.5	101%	1	\$ 4.5	\$ 6.1
Vermont	\$ 36.0	\$ 5.5	\$ -	\$ -	\$ -	142%	1	\$ -	\$ -
Virginia	\$ 10.4	\$ 50.6	\$ 40.5	\$ 22.3	\$ 18.2	93%	0	\$ -	\$ -
Washington	\$ 32.2	\$ 38.3	\$ 6.1	\$ -	\$ 6.1	108%	1	\$ 6.1	\$ 16.5
West Virginia	\$ 56.9	\$ 10.5	\$ -	\$ -	\$ -	125%	1	\$ -	\$ -
Wisconsin	\$ 37.5	\$ 28.0	\$ -	\$ -	\$ -	86%	0	\$ -	\$ -
Wyoming	\$ 33.5	\$ 4.2	\$ -	\$ -	\$ -	145%	1	\$ -	\$ -
Total	\$ 1,738	\$ 1,738	\$ 862	\$ 559	\$ 303		34		\$ 209

Check interstate  
Sum Revenues

(0.0) 1 613

(0.0) 1 317

0.0 5 356

(0.0) 342

(0.0) 6 263

(0.0) 1 533

0.0 4 891

0.0 607

(0.0) 1 816

(0.1) 23 838

82 416

29%

**High Cost Modeling Project**  
**Part 3 - Results - Change from Existing Program**

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	This Plan Compared to Existing Federal Program						
	Existing Program			This Plan			Net Gain
	Contri- bution	Support	Benefit	Contri- bution	Support	Benefit	
	(millions)	(millions)	(millions)	(millions)	(millions)	(millions)	(millions)
Alabama	\$ 17	\$ 32	\$ 15	\$ 27	\$ 32	\$ 6	\$ (9)
Arizona	\$ 21	\$ 26	\$ 5	\$ 38	\$ 44	\$ 5	\$ (0)
Arkansas	\$ 10	\$ 55	\$ 45	\$ 16	\$ 99	\$ 83	\$ 38
California	\$ 144	\$ 38	\$ (106)	\$ 189	\$ 38	\$ (151)	\$ (45)
Colorado	\$ 21	\$ 33	\$ 12	\$ 38	\$ 34	\$ (3)	\$ (15)
Connecticut	\$ 18	\$ 1	\$ (17)	\$ 31	\$ 14	\$ (17)	\$ (0)
Delaware	\$ 4	\$ -	\$ (4)	\$ 8	\$ -	\$ (8)	\$ (3)
District of Columbia	\$ 7	\$ -	\$ (7)	\$ 11	\$ -	\$ (11)	\$ (4)
Florida	\$ 78	\$ 16	\$ (62)	\$ 127	\$ 65	\$ (61)	\$ 0
Georgia	\$ 35	\$ 54	\$ 19	\$ 64	\$ 123	\$ 59	\$ 40
Hawaii	\$ 5	\$ 1	\$ (4)	\$ 8	\$ 4	\$ (4)	\$ (0)
Idaho	\$ 5	\$ 26	\$ 20	\$ 10	\$ 27	\$ 17	\$ (3)
Illinois	\$ 58	\$ 17	\$ (40)	\$ 82	\$ 17	\$ (65)	\$ (25)
Indiana	\$ 24	\$ 12	\$ (13)	\$ 36	\$ 12	\$ (24)	\$ (11)
Iowa	\$ 12	\$ 25	\$ 13	\$ 19	\$ 25	\$ 6	\$ (7)
Kansas	\$ 12	\$ 48	\$ 36	\$ 19	\$ 60	\$ 41	\$ 5
Kentucky	\$ 15	\$ 20	\$ 5	\$ 27	\$ 72	\$ 46	\$ 40
Louisiana	\$ 17	\$ 48	\$ 31	\$ 26	\$ 66	\$ 40	\$ 9
Maine	\$ 6	\$ 11	\$ 5	\$ 9	\$ 50	\$ 41	\$ 36
Maryland	\$ 26	\$ 0	\$ (25)	\$ 44	\$ 0	\$ (43)	\$ (18)
Massachusetts	\$ 34	\$ 0	\$ (33)	\$ 52	\$ 0	\$ (51)	\$ (18)
Michigan	\$ 41	\$ 24	\$ (18)	\$ 54	\$ 24	\$ (30)	\$ (12)
Minnesota	\$ 21	\$ 28	\$ 7	\$ 33	\$ 28	\$ (4)	\$ (12)
Mississippi	\$ 10	\$ 23	\$ 13	\$ 16	\$ 107	\$ 91	\$ 78
Missouri	\$ 24	\$ 39	\$ 15	\$ 36	\$ 39	\$ 3	\$ (13)
Montana	\$ 4	\$ 34	\$ 30	\$ 7	\$ 46	\$ 39	\$ 9
Nebraska	\$ 7	\$ 17	\$ 9	\$ 12	\$ 35	\$ 23	\$ 14
Nevada	\$ 9	\$ 8	\$ (1)	\$ 18	\$ 8	\$ (11)	\$ (9)
New Hampshire	\$ 7	\$ 7	\$ 1	\$ 13	\$ 24	\$ 11	\$ 11
New Jersey	\$ 50	\$ 3	\$ (47)	\$ 87	\$ 3	\$ (84)	\$ (37)
New Mexico	\$ 7	\$ 29	\$ 22	\$ 14	\$ 53	\$ 39	\$ 17
New York	\$ 94	\$ 30	\$ (64)	\$ 148	\$ 84	\$ (64)	\$ (0)
North Carolina	\$ 33	\$ 29	\$ (4)	\$ 54	\$ 74	\$ 20	\$ 24
North Dakota	\$ 3	\$ 18	\$ 15	\$ 6	\$ 18	\$ 12	\$ (3)
Ohio	\$ 47	\$ 10	\$ (37)	\$ 73	\$ 10	\$ (63)	\$ (26)
Oklahoma	\$ 14	\$ 44	\$ 30	\$ 22	\$ 44	\$ 23	\$ (7)
Oregon	\$ 16	\$ 26	\$ 11	\$ 25	\$ 35	\$ 10	\$ (0)
Pennsylvania	\$ 56	\$ 11	\$ (44)	\$ 87	\$ 11	\$ (75)	\$ (31)
Rhode Island	\$ 5	\$ -	\$ (5)	\$ 9	\$ -	\$ (9)	\$ (4)
South Carolina	\$ 16	\$ 39	\$ 23	\$ 27	\$ 106	\$ 79	\$ 57
South Dakota	\$ 3	\$ 14	\$ 11	\$ 6	\$ 14	\$ 8	\$ (3)
Tennessee	\$ 24	\$ 19	\$ (5)	\$ 39	\$ 33	\$ (5)	\$ (0)
Texas	\$ 80	\$ 93	\$ 13	\$ 116	\$ 128	\$ 13	\$ 0
Utah	\$ 8	\$ 7	\$ (1)	\$ 14	\$ 14	\$ (1)	\$ 0
Vermont	\$ 3	\$ 9	\$ 6	\$ 6	\$ 36	\$ 30	\$ 24
Virginia	\$ 33	\$ 10	\$ (22)	\$ 57	\$ 10	\$ (47)	\$ (24)
Washington	\$ 26	\$ 32	\$ 6	\$ 43	\$ 49	\$ 6	\$ (0)
West Virginia	\$ 7	\$ 20	\$ 13	\$ 12	\$ 57	\$ 45	\$ 32
Wisconsin	\$ 23	\$ 37	\$ 15	\$ 31	\$ 37	\$ 6	\$ (9)
Wyoming	\$ 3	\$ 17	\$ 14	\$ 5	\$ 33	\$ 29	\$ 15
Total	\$ 1,243	\$ 1,142	\$ (101)	\$ 1,948	\$ 1,948	\$ 0	\$ 101

**High Cost Modeling Project  
Existing System Net Benefits**

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	Contributions Under Current System			Support Under Current System			Net Benefit
	High Cost Fund	DEM Weighting	Total	High Cost Fund	DEM Weighting	Total	Total
	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)
Alabama	\$ 11,621	\$ 5,747	\$ 17,368	\$ 21,405	\$ 11,044	\$ 32,449	\$ 15,081
Arizona	\$ 12,564	\$ 8,165	\$ 20,729	\$ 19,741	\$ 6,478	\$ 26,220	\$ 5,490
Arkansas	\$ 6,704	\$ 3,477	\$ 10,182	\$ 45,756	\$ 9,542	\$ 55,299	\$ 45,117
California	\$ 103,056	\$ 40,526	\$ 143,582	\$ 28,502	\$ 9,195	\$ 37,698	\$ (105,885)
Colorado	\$ 12,390	\$ 8,400	\$ 20,791	\$ 28,276	\$ 4,301	\$ 32,577	\$ 11,786
Connecticut	\$ 10,592	\$ 7,299	\$ 17,891	\$ -	\$ 1,229	\$ 1,229	\$ (16,661)
Delaware	\$ 2,427	\$ 1,803	\$ 4,230	\$ -	\$ -	\$ -	\$ (4,230)
District of Columbia	\$ 4,015	\$ 2,805	\$ 6,820	\$ -	\$ -	\$ -	\$ (6,820)
Florida	\$ 49,805	\$ 28,013	\$ 77,817	\$ 11,619	\$ 4,666	\$ 16,285	\$ (61,532)
Georgia	\$ 22,247	\$ 13,222	\$ 35,469	\$ 41,078	\$ 12,966	\$ 54,044	\$ 18,575
Hawaii	\$ 3,202	\$ 1,749	\$ 4,951	\$ -	\$ 645	\$ 645	\$ (4,306)
Idaho	\$ 3,188	\$ 2,140	\$ 5,329	\$ 18,868	\$ 6,904	\$ 25,772	\$ 20,443
Illinois	\$ 38,727	\$ 18,796	\$ 57,523	\$ 6,626	\$ 10,806	\$ 17,431	\$ (40,092)
Indiana	\$ 16,246	\$ 8,033	\$ 24,279	\$ 2,975	\$ 8,550	\$ 11,525	\$ (12,754)
Iowa	\$ 7,781	\$ 4,253	\$ 12,033	\$ 9,067	\$ 15,628	\$ 24,695	\$ 12,661
Kansas	\$ 7,734	\$ 4,038	\$ 11,772	\$ 36,046	\$ 12,186	\$ 48,232	\$ 36,460
Kentucky	\$ 9,874	\$ 4,998	\$ 14,872	\$ 14,062	\$ 6,070	\$ 20,132	\$ 5,260
Louisiana	\$ 11,790	\$ 5,656	\$ 17,446	\$ 39,990	\$ 8,228	\$ 48,218	\$ 30,772
Maine	\$ 3,928	\$ 1,999	\$ 5,927	\$ 4,640	\$ 6,232	\$ 10,872	\$ 4,945
Maryland	\$ 15,881	\$ 9,831	\$ 25,712	\$ -	\$ 498	\$ 498	\$ (25,214)
Massachusetts	\$ 21,604	\$ 12,170	\$ 33,774	\$ 7	\$ 332	\$ 338	\$ (33,437)
Michigan	\$ 29,675	\$ 11,670	\$ 41,345	\$ 13,137	\$ 10,489	\$ 23,626	\$ (17,720)
Minnesota	\$ 14,203	\$ 6,673	\$ 20,877	\$ 10,115	\$ 17,992	\$ 28,107	\$ 7,230
Mississippi	\$ 6,477	\$ 3,569	\$ 10,046	\$ 17,702	\$ 4,913	\$ 22,615	\$ 12,569
Missouri	\$ 15,944	\$ 8,039	\$ 23,983	\$ 29,429	\$ 9,967	\$ 39,396	\$ 15,413
Montana	\$ 2,506	\$ 1,606	\$ 4,112	\$ 23,380	\$ 10,287	\$ 33,667	\$ 29,555
Nebraska	\$ 4,828	\$ 2,639	\$ 7,467	\$ 6,688	\$ 9,926	\$ 16,614	\$ 9,147
Nevada	\$ 5,589	\$ 3,674	\$ 9,263	\$ 3,208	\$ 4,625	\$ 7,833	\$ (1,430)
New Hampshire	\$ 3,917	\$ 2,897	\$ 6,814	\$ 2,494	\$ 4,839	\$ 7,332	\$ 519
New Jersey	\$ 30,058	\$ 19,682	\$ 49,740	\$ 2,048	\$ 882	\$ 2,930	\$ (46,810)
New Mexico	\$ 4,238	\$ 2,908	\$ 7,145	\$ 19,107	\$ 10,119	\$ 29,226	\$ 22,081
New York	\$ 60,184	\$ 33,525	\$ 93,689	\$ 9,633	\$ 20,390	\$ 30,023	\$ (63,666)
North Carolina	\$ 21,681	\$ 11,214	\$ 32,895	\$ 21,475	\$ 7,586	\$ 29,061	\$ (3,833)
North Dakota	\$ 1,843	\$ 1,094	\$ 2,938	\$ 6,458	\$ 11,317	\$ 17,775	\$ 14,838
Ohio	\$ 32,405	\$ 14,267	\$ 46,672	\$ 4,625	\$ 5,138	\$ 9,763	\$ (36,910)
Oklahoma	\$ 9,485	\$ 4,821	\$ 14,306	\$ 26,637	\$ 17,182	\$ 43,818	\$ 29,513
Oregon	\$ 9,612	\$ 6,100	\$ 15,712	\$ 18,151	\$ 8,152	\$ 26,303	\$ 10,591
Pennsylvania	\$ 37,047	\$ 18,531	\$ 55,578	\$ 1,426	\$ 10,012	\$ 11,437	\$ (44,141)
Rhode Island	\$ 3,134	\$ 2,004	\$ 5,138	\$ -	\$ -	\$ -	\$ (5,138)
South Carolina	\$ 10,209	\$ 5,848	\$ 16,057	\$ 22,924	\$ 15,650	\$ 38,574	\$ 22,517
South Dakota	\$ 2,004	\$ 1,251	\$ 3,254	\$ 3,991	\$ 10,288	\$ 14,279	\$ 11,024
Tennessee	\$ 15,984	\$ 8,471	\$ 24,455	\$ 7,573	\$ 11,659	\$ 19,232	\$ (5,222)
Texas	\$ 55,565	\$ 24,144	\$ 79,709	\$ 73,166	\$ 19,429	\$ 92,595	\$ 12,887
Utah	\$ 5,123	\$ 3,132	\$ 8,255	\$ 2,875	\$ 4,547	\$ 7,422	\$ (834)
Vermont	\$ 1,902	\$ 1,350	\$ 3,251	\$ 3,974	\$ 4,880	\$ 8,853	\$ 5,602
Virginia	\$ 19,593	\$ 13,066	\$ 32,658	\$ 4,955	\$ 5,419	\$ 10,374	\$ (22,284)
Washington	\$ 17,016	\$ 9,406	\$ 26,422	\$ 24,655	\$ 7,570	\$ 32,225	\$ 5,602
West Virginia	\$ 4,404	\$ 2,605	\$ 7,008	\$ 16,839	\$ 3,245	\$ 20,085	\$ 13,076
Wisconsin	\$ 15,911	\$ 6,800	\$ 22,711	\$ 12,055	\$ 25,433	\$ 37,488	\$ 14,777
Wyoming	\$ 1,427	\$ 1,106	\$ 2,534	\$ 12,571	\$ 4,134	\$ 16,705	\$ 14,171
US Average							
Calculated Total	\$ 817,323	\$ 425,210	\$ 1,242,532	\$ 729,946	\$ 411,572	\$ 1,141,518	\$ (101,014)

BEFORE THE FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

In the Matter of

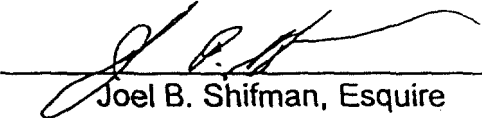
Federal-State Joint Board on  
Universal Service

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CC Docket No. 96-45

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing documents  
have been furnished to the parties on the attached service list.

  
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